

Applicants: Drumme et al.  
For: Improved Specimen Container

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1. An improved specimen container, adapted to enable a user to inject or withdraw materials into or out of said container using a material transfer device with minimal risk of spills or leaks, comprising,

a receptacle having an opening;

a lid, comprising a means to seal said opening, having a top surface and a bottom surface and a bore therethrough; and

a plug comprising,

an upper and lower shoulder, at least one of said shoulders is deformable, wherein said plug is seated in said bore of said lid so that said upper shoulder is seated on said top surface of said lid and said lower shoulder is seated on said bottom surface of said lid, and

a membrane capable of being penetrated with a material transfer device and which self-reseals to prevent leakage from said receptacle.

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2. The specimen container of claim 1, further comprising a plug cover which covers a top surface of said plug and which is capable of being raised and lowered by a user's one hand leaving the user's other hand free to insert a specimen into, or withdraw a specimen from, the specimen container.

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2 *2-11-83*

3. The specimen container of claim 2, wherein said plug cover is hingedly fixed to said lid.

4. The specimen container of claim 2, wherein said plug cover further comprises a flange which surrounds said upper shoulder of said plug when in a lowered position.

5. The specimen container of claim 2, wherein said plug cover further comprises a flange adapted to engage a corresponding flange on said lid when said plug cover is in a lowered position so that said plug cover is releaseably fixed in said lowered position to further inhibit any material from entering or leaking out of said receptacle.

6. The specimen container of claim 2, wherein said lid has an outer boundary and wherein a portion of said plug cover extends beyond said boundary.

7. The specimen container of claim 2, wherein said plug and plug cover are connected to each other by a flexible cord.

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2 *2-11-83*

8. The specimen container of claim 7, wherein said plug, plug cover and cord are a molded unitary member.

9. The specimen container of claim 8, wherein said molded unitary member is molded from thermoplastic rubber.

1 10. The specimen container of claim 1, wherein said plug is capable of being  
2 removed after said plug is inserted through and seated in said bore.

3 11. The specimen container of claim 1, wherein one or both of said shoulders are  
4 annular.

1 12. The specimen container of claim 1, wherein said plug further comprises a  
2 material transfer device guide for directing said material transfer device into said plug and  
3 through said self-sealing membrane.

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1 13. The specimen container of claim 12, wherein said material transfer device  
2 guide has an outer diameter and wherein said plug further comprises one or more means for  
3 altering said outer diameter of said material transfer device guide to enable said guide to  
4 adaptably flex in order to accommodate material transfer devices having varying outer  
5 diameters.

1 14. The specimen container of claim 13, wherein said means for altering said outer  
2 diameter comprises one or more expandable slits in said plug which extend radially outward  
3 from a center of said material transfer device guide.

1 15. The specimen container of claim 1, wherein said upper shoulder has an outer  
2 diameter greater than said lower shoulder.

1           16.    The specimen container of claim 1, wherein said lid further comprises a  
2 conduit, which extends into said receptacle downward from said bottom surface of said lid,  
3 through which said bore further extends, and which comprises a lower lip on which said  
4 lower shoulder of said plug is seated.

1           17.    The specimen container of claim 1, wherein said receptacle further comprises  
2 threads proximate said opening and said means to seal said opening comprises threads on  
3 said lid which correspond to said threads on said receptacle.


1           18.    The specimen container of claim 1, wherein said plug is molded from  
2 thermoplastic rubber.

1           19.    The specimen container of claim 18, wherein said plug further comprises a  
2 ridge having a continuous perimeter on said top surface of said plug, wherein said continuous  
3 perimeter of said ridge presses against an underside of said plug cover to create a seal for  
4 additional protection against leakage.

1 20. An improved specimen container, adapted to enable a user to inject or  
2 withdraw materials into or out of said container using a material transfer device with minimal  
3 risk of spills or leaks, comprising,  
4 a receptacle having an opening;  
5 a lid, comprising a means to seal said opening, having a top surface and a  
6 bottom surface and a bore therethrough;  
7 a plug comprising,  
8 an upper and lower shoulder, at least one of said shoulders is  
9 deformable, wherein said plug is seated in said bore of said lid so that said upper shoulder is  
10 seated on said top surface of said lid and said lower shoulder is seated on said bottom surface  
11 of said lid, and  
12 a membrane capable of being penetrated with a material transfer device  
13 and which self-reseals to prevent leakage from said receptacle; and  
14 a plug cover which covers a top surface of said plug and which is capable of  
15 being raised and lowered by a user's one hand leaving the user's other hand free to insert a  
16 specimen into, or withdraw a specimen from, the specimen container.

1 21. The specimen container of claim 20, wherein said plug further comprises a  
2 material transfer device guide for directing said material transfer device into said plug and  
3 through said self-sealing membrane.

1 22. The specimen container of claim 20, wherein said plug cover and said plug are  
2 connected to each other by a flexible cord.

1 23. The specimen container of claim 22, wherein said plug, plug cover and cord  
2 are a molded unitary member. 

1 24. The specimen container of claim 23, wherein said molded unitary member is  
2 molded from thermoplastic rubber.

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2 *ak* 25. An improved specimen container, adapted to enable a user to inject or  
3 withdraw materials into or out of said container using a material transfer device with minimal  
4 risk of spills or leaks, comprising,  
5 a receptacle having an opening;  
6 a lid, comprising a means to seal said opening, having a top surface and a  
7 bottom surface and a conduit, extending into said receptacle downward from said bottom  
8 surface of said lid, through which a bore having a diameter extends and which comprises a  
9 distal lower lip;  
10 a plug having a top surface comprising,  
11 an upper and lower shoulder, wherein said plug is seated in said bore  
12 of said lid so that said upper shoulder is seated on said top surface of said lid and said lower  
13 shoulder is seated on said lower lip of said conduit,  
14 a membrane capable of being penetrated by said material transfer  
15 device and which self-reseals to prevent leakage from said receptacle,  
16 a material transfer device guide having a perimeter and an outer  
17 diameter and centered in said conduit, comprising a well which extends downward from said  
18 top surface of said plug and into said conduit, and which comprises an annular wall which  
19 extends into said conduit to a floor of said well, wherein said floor forms said membrane,  
20 and  
21 a plurality of expandable slits which radiate outward from said  
22 perimeter of said material transfer device guide and which enable said outer diameter of said  
guide to flexibly expand in order to accommodate material transfer devices having varying

1 outer diameters; and  
2 a plug cover which covers a top surface of said plug and which is capable of  
3 being raised and lowered by a user's one hand leaving the user's other hand free to insert a  
4 specimen into, or withdraw a specimen from, the specimen container.

1 26. The specimen container of claim 25, wherein said plug is capable of being  
2 removed after said plug is inserted through and seated in said bore.

1 27. The specimen container of claim 25, wherein said plug and said plug cover are  
2 connected to each other by a flexible cord.

1 28. The specimen container of claim 27, wherein said plug, plug cover and cord  
2 are a molded unitary member.

1 29. The specimen container of claim 28, wherein said molded unitary member is  
2 molded from thermoplastic rubber.



1           **30.**   An improved specimen container, adapted to enable a user to inject or  
2 withdraw materials into or out of said container using a material transfer device with minimal  
3 risk of spills or leaks, comprising,  
4           a receptacle having an opening; and  
5           a molded lid comprising a bore therethrough and a self-resealable membrane  
6 insert-molded into said lid and across said bore.

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